Abstract

A method for transferring data on the fly between an RGB color space and a YCrCb color space useful for a DCT block-computation engine significantly increases throughput and decreases processor overhead. According to one example embodiment, data is transferred from an RGB color space memory to a YCrCb color space memory in a form useful for presentation to a DCT block-computation engine. In response to accessing the RBG color space memory, the RBG values are asynchronously written to YCrCb intermediate buffers so that one of the YCrCb intermediate buffers is filled through sub-sampling in a manner useful for the DCT block-computation engine while another of the YCrCb intermediate buffers is still being filled. The DCT block-computation engine then accessed the filled YCrCb intermediate buffers while the other of the YCrCb intermediate buffers continues to collect RGB values from the RGB color space memory for the next DCT computation. Other aspects are directed to conversion of the RGB color space to the YCrCb color space using, respectively, a block-by-block conversion, a line-by-line conversion, and a word-by-word conversion.